nous, not so thick as in *H. nephriticum*, though as in that species it sometimes separates when dry; rufous when divided. Cells brownish olive. Spores oblong, apiculate, differently shaped from those of the other species, and comparable only with those of *H. membranaceum*, Corda, of which at present nothing more is known than from an unpublished plate.

*378. *Geaster rufescens*, P.

An authentic specimen from Persoon is identical with *G. fimbriatus*, Fr., and to this belong some of the synonyms in 'Eng. Fl.,' especially that of Sowerby. *Geaster rufescens*, Fr., is quite a different thing, specimens of a small form of which were abundant at Thringstone, Leicestershire, a few years since, and a single specimen has occurred at Cliffe. The figures of Schmiedel are indifferent representations of *G. fimbriatus*.

379. *Geaster mammosus*, Chev.

An authentic specimen of Sow. t. 401 proves to be this species. We hope then that the British species, as far as they have at present been discovered, are now correctly referred to their synonyms.

XXVIII.—*On the Insects of Jamaica.* By Philip Henry Gosse.

[Continued from p. 181.]

35. *Victorina Steneles.* This fine species is found throughout the year, but is common only during the summer months. It haunts the bushes and herbage, at the edges of woods, the sides of roads and mountain-paths, beating about with an irregular motion, not often alighting. When alarmed, its flight is strong and rapid, but not high. Most of the specimens that one sees are more or less damaged by beating. It is widely distributed over mountain and lowland; in the bridle-paths of the Cotta Wood, near Content, it is, I think, more numerous than elsewhere.

In October, a large spinous caterpillar, black with red spots, furnished with two longer clubbed spines near the head, was brought me, which produced a short, thick chrysalis, of a beautiful pale green hue. From this in a very few days emerged the present butterfly. As the larva was ready for its change when I obtained it, I do not know its food.

36. *Marpesia Eleucha.* This occurred sparingly during the summer, both in the lowlands and on the Hampstead Road. It affects shrubs and small trees, at a height of six or eight feet from the ground, rather than herbage, fluttering over them with rapid vibration of the wings; it is however easily alarmed, and not readily approached.

37. *Heterochroa Iphicla* (var. ?). In elevated situations this butterfly is rather common, and it extends down to the level of the lower hills. At the brow of Bluefields Mountain it may be met with at all seasons, playing around the summits of tall blossoming shrubs. Its motions are sudden and rapid ; it frequently alights and sits on a flower or leaf, with its wings spread to the sun, or alternately opens and closes them quickly in the manner of the *Vanessæ* : shy and vigilant, an approach puts it instantly on the wing, when it darts swiftly out of reach among the bushes, but soon returning to the same spot again. In this butterfly, as well as several others which seem to be specifically identical with Brazilian specimens, there is a peculiarity of form in West Indian individuals by which they may be at once distinguished. It consists in a tendency to increased development of the tailed processes of the posterior wings. Though this may not be observable in a comparison of a single specimen from each locality, it becomes conspicuous when a large collection comes under the eye.

38. *Chlorippe Laura.* A male and a female of this species occurred, both on the Hampstead Road, in June. Their manners were much the same as those of the preceding.

39. *Timetes Chiron* (*P. Marius*, Cram.). In the lowlands, especially at Sabito, this species is not uncommon during summer, appearing about the end of April : in mountain localities it is rather rare. It affects road-sides, and open grassy glades in woods ; in the former dancing along the road at a small elevation with a zigzag flight, in the latter occasionally alighting on the turf. When one is seen, others are usually not far off ; but the species is not gregarious. It is rather difficult of capture, being swift when alarmed.

40. *Gynæcia Dirce.* Contrary to the habits of most butterflies, this species avoids the sun. Dark and sombre woods, where there is little underwood, but where the meeting and interlacing branches overhead admit only a subdued light, are its favourite haunts. A grove of rose-apple trees (*Eugenia jambos*) by the side of the Hampstead Road, and a gloomy corner of the zigzag Bamboo Walk on Grand-Vale Mountain, are situations where it may be seen in some numbers on any day in summer. I have also seen it rarely in the high woods of Auld Ayr, behind Bluefields. When alarmed it flies rather swiftly, with an irregular motion, for a few yards only, suddenly and unexpectedly alighting on the trunk of a tree, erecting its closed wings in the same moment. The action is exceedingly like that of the *Catocalæ,* and as in the case of those moths, the sudden cessation of flight often causes the unpractised eye to lose sight of the object : in flight the contrast of the broad pale yellow bands on the black wings renders it conspicuous, but the variegated under surface,

so exquisitely beautiful when examined in detail, has so much the appearance of the gray bark of a tree as to be undistinguishable, even though the eye has been following it up to that moment. The insect seems to be aware of this power of concealment, and to trust to it; for after having thus alighted it will allow of a close approach without again flying, provided the attention of the observer be not very obviously directed to the spot.

41. *Paphia troglodyta.* I believe this species occurred but on a single occasion; one morning early in May, three specimens were captured by my servant at Sabito. I know nothing of its habits.

42. *Paphia Portia* (*P. Astyanax*, Cram.). This is one of the species which are found in considerable abundance all through the year. It chiefly affects the lowlands, though I have occasionally taken it at the elevation of Bluefields Mountain. The road at Sabito and at Belmont, and the immediate vicinity of Alligator Pond, in all of which the soil is a heavy sand close to the sea-beach, are the situations where I have found it most numerous. To take it requires a net with a long staff, for it flies rather high, playing over the tops of the trees, but frequently alighting on the broad leaf of a sea-grape (*Coccoloba*) at the height of fifteen or twenty feet from the ground. As if confident in this security, it will frequently allow the net to be placed almost against it before it will move. Two sometimes play together in the air, rising to a great elevation, with swift tortuous evolutions; then, descending, each will suddenly alight on a leaf, turning in the instant so as to bring the head downwards,—an invariable rule,—and closing the wings at the same moment, when it will rest awhile motionless. In recent specimens there is a rich violet opalescence, which plays over the scarlet surface of the wings in some lights, and which is very beautiful.

43. *Aganisthos Orion.* At Sabito Bottom this imposing butterfly is rather common, and so it is some two or three miles farther on, upon the same road, beyond the Water-wheel. These spots have in common the close proximity of the sea-beach on the one hand, and on the other a dense impenetrable morass, covered with trees and bushes. Over the tops of the tallest trees of the morass, *Orion* is frequently seen playing with another of his species, occasionally coming down to alight on the topmost twig, or on some projecting leaf of a tree, frequently one that overhangs the road; it always rests head downward, in the manner of *Portia*; it is very vigilant, never descends within many yards of the ground, and will not allow of an intruder's approach; when it flies, it will often, after taking a wide circuit, return to

the same twig or leaf it had left. Its flight is rapid and commanding, effected by a succession of great, irregular *bounds,* if I may use such a term, with a leisurely flapping of the large wings; but sometimes it sails along with very little flapping. Its appearance in the air, from its size and dark colour, is striking.

44. *Charaxes Cadmus.* With much resemblance to the preceding species in form and coloration, *Cadmus* resembles it still more in general habits. It frequents also the same localities, but less exclusively; for besides Sabito and the Cave, where it is most common and constant, it occurs also in summer on the Hampstead Road, and in many lanes and glades in the hill-side woods. It is a butterfly of lofty flight, wary and swift, and hence is difficult of capture; yet sometimes, when sitting on a leaf, it manifests an unusual fearlessness. Its habit is to fly rapidly round and round a considerable area over the trees, occasionally resting on the lofty leaves and twigs: if another of the same species appears, an encounter takes place, whether hostile or amatory I know not, during which they whirl round each other with amazing rapidity; in these tussles they often descend near the ground, but on separation each returns to its usual elevation. The mode of resting suddenly from flight, without any hovering, even for a moment, over the spot, the immediate closure of the wings and the position, the head always being downward, with many other details of habit, are common to *Portia, Orion* and *Cadmus.*

45. *Libythea* (sp. nov.? near *Motya*). All I can say of this is that it was taken by my servant at Alligator Pond, a few yards from the sea-side, on an afternoon near the end of June.

46. *Calisto Zangis.* We rarely see this butterfly in the open fields or roads, but within the sombre shade of the woods it is almost everywhere to be met with, from the forest which comes down to the sea-side at Sabito to the summit of Bluefields Peak; and it is no less numerous than widely spread. Its habits are much the same as those of our own sylvan *Hipparchiæ;* it proceeds with an irregular dancing jerking motion, a few inches above the ground; commonly pursuing the same general direction, never hovering or flitting to and fro, rarely turning upon its course, and rarely alighting. Its flight is slow and feeble, and hence it is captured with the utmost facility. The large eye-like spot in the centre of the anterior wing in the male gives to this sex an aspect very diverse from that of the female. It is abundant throughout the whole year.

47. *Thecla Pan.* The Hampstead Road is the chief locality in which I have seen this species. There, in June, it is very common, frisking about in the morning sun, over such trees as are in blossom, in large parties, often alighting, and rubbing the

closed wings against each other, in the manner common to the genus.

48. *Thecla* (sp. nov. near *Pan*, No. 2632, Br. Mus.). About the end of March this little sombre species occurs; playing about the flowering plants and fruit-trees of the pastures, especially in the lowlands. In Bluefields pasture I have observed it affect the bushes of *Cleome pentaphylla*, whose elegant long-stamened blossoms probably attract it, though it does not rest much on them, but pursues its game of aërial play with its fellows in incessant and unwearied pertinacity; half-a-dozen or more whirling about each other in the air with a rapidity of contortion that the eye of the observer vainly attempts to follow. Often two or three will begin to play around an orange-tree, and in a few seconds, others which we had not seen before, coming from no one knows where, suddenly join in the gambols, and thus the little group increases to eight or ten, which after a while separate and disperse as invisibly as they came. Their small size and great rapidity of motion doubtless help to produce this effect. They delight in the full beams of the burning sun; the hottest part of the day is the season of their greatest activity; and even the shadow of a passing cloud will spoil their play.

49. *Thecla* (sp. nov., No. 2635, Br. Mus.).

50. *Thecla Acis*. A single specimen.

51. *Thecla* (sp. nov. near *Hugo*). A single specimen occurred, but I have no note of the time or place of its capture.

52. *Thecla* (sp. nov., No. 2659, Br. Mus.). A very lovely little species of a splendid silvery blue above, the apex of the wings broadly black; the under surface bluish white with many faint lines. It occurred two or three times only in the month of June on the Hampstead Road; each one was solitary, flitting among trees or resting on leaves at a considerable elevation, at the edge of the dark forest, itself out of the reach of the sun's rays.

53. *Thecla* (sp. nov. near *Herodotus*, No. 2718, Br. Mus.). Somewhat like the preceding above, but larger and much less brilliant: the under surface is of a lively yellowish green, the posterior wings brown at the margin, with a white edge. This species was still rarer than the former, but frequented the same situation.

54. *Thecla* (sp. nov.). Above with a general resemblance to the former two, the size agreeing with the last; the blue is very rich, approaching a purple tint. The inferior surface has somewhat the same character as in *Pan*. It is very rare; I met with it but once or twice on the Hampstead Road in June.

55. *Polyommatus Cassius*. This minute and delicate little "Blue" is exceedingly abundant in the pastures of the lowlands and the guinea-grass pieces of the hill-sides. In company with

the smaller *Teriades* and *Hesperiæ* it flits over the grass in thousands; frequently it engages in play with others of its species, with the hilarity of the little *Theclæ*, but in a less degree. It rarely rises to a greater height than a foot or eighteen inches above the turf, and though its motions are swift and sprightly yet it is very easily captured. It is active through all the seasons of the year.

[To be continued.]

XXIX.—*Description of a new genus of British Marine Zoophytes belonging to the family* Eucratiadæ. By JOHN COPPIN, Esq., M.A.

[With a Plate.]

NOV. GEN. SALPINGIA.

(Derivation from σάλπιγξ, *a trumpet.*)

Char. Cells elongated, sessile upon a branched stem; apertures lateral, broader above than below, produced; base of cells surrounded by one or more spines and trumpet-shaped processes.

SALPINGIA HASSALLII.

Char. Polypidom calcareous, branched, confervoid, jointed, punctated; cells in a single series, distant, elongated, sessile, upon a branched stem; apertures lateral, produced, narrow below, broad and straight above; stem very slender, dichotomously branched, dilating upwards to the base of each polype-cell; spines and trumpet-shaped processes springing usually out of the angle formed between the stem and the cells, and from the dilated portion of the stem on which the cell itself is seated.

Hab. Parasitical on small filamentous Fuci, together with the *Eucratea chelata*. Brighton: rare. June 1848.—Pl. X. fig. 3.

This is a very elegant production, certainly both generically and specifically distinct from any hitherto-described zoophyte, but displaying an evident relation to the genus *Eucratea*, which has been made the type of a distinct family, *Eucratiadæ*.

The appearance of this zoophyte under the microscope is very beautiful; the long and slender footstalks surmounted by the uniserial cells, with their curious apertures, the singular-looking but not inelegant trumpet-shaped processes, the entire polypidom being at the same time regularly and delicately frosted or punctated, all conspire to render this an exceedingly graceful microscopic object.

An attentive examination of the construction of the polypidom of this species, and a consideration of the position of the several